

WE CLAIM:

1. An isolated heregulin 2 polypeptide.
- 5 2. The heregulin 2 polypeptide of claim 1 which is antigenically active.
3. The heregulin 2 of claim 1 which is biologically active.
- 10 4. The heregulin 2 of claim 3 having at least 75% homology with a naturally-occurring polypeptide comprising the translated heregulin 2- $\alpha$  amino acid sequence shown in figure 4.
- 15 5. The heregulin 2 of claim 3 having at least 75% homology with a naturally-occurring polypeptide comprising the translated heregulin 2- $\beta$  amino acid sequence shown of figure 8.
- 20 6. The heregulin 2 of claim 3 that is mature human heregulin 2- $\alpha$ .
7. The heregulin 2 of claim 3 that is mature human heregulin 2- $\beta$ .
- 25 8. A composition comprising heregulin 2- $\alpha$  of claim 4 and a pharmaceutically acceptable carrier.
9. A composition comprising heregulin 2- $\beta$  of claim 5 and a pharmaceutically acceptable carrier.
10. The heregulin 2- $\alpha$  of claim 4 which is a fragment of the heregulin 2- $\alpha$  amino acid sequences having at least 5 consecutive residues.
- 30 11. The heregulin 2- $\alpha$  of claim 10 wherein the sequence contains at least 10 consecutive residues.
12. The heregulin 2- $\alpha$  of claim 11 wherein the sequence contains at least 15 consecutive residues.

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13. The heregulin 2- $\beta$  of claim 5 which is a fragment of the heregulin 2- $\beta$  amino acid sequences having at least 5 consecutive residues.
14. The heregulin 2- $\beta$  of claim 13 wherein the sequence contains at least 10 consecutive residues.
15. The heregulin 2- $\beta$  of claim 14 wherein the sequence contains at least 15 consecutive residues.
16. The heregulin 2- $\alpha$  of claim 4 which has an amino acid sequence which is at least 85% homologous with the sequence of Figure 4.
17. The heregulin 2- $\alpha$  of claim 16 which has an amino acid sequence which is at least 95% homologous with the sequence of Figure 4.
18. The heregulin 2- $\beta$  of claim 5 which has an amino acid sequence which is at least 85% homologous with the sequence naturally occurring polypeptide of Figure 8 .
19. The heregulin 2- $\beta$  of claim 18 which has an amino acid sequence which is at least 95% homologous with the HRG2- $\beta$  sequence of Figure 8.
20. An isolated antibody that is capable of binding heregulin 2- $\beta$  or heregulin 2- $\alpha$ .
21. Isolated heregulin 2- $\alpha$  encoding nucleic acid.
22. The nucleic acid of claim 21 that is DNA and comprises the translated DNA sequence shown in Figure 4.
23. Isolated heregulin 2- $\beta$  encoding nucleic acid.
24. The nucleic acid of claim 23 that is DNA and comprises a sequence encoding the heregulin 2- $\beta$  amino acid sequence.

25. An expression vector comprising the nucleic acid of claim 21.
26. An expression vector comprising the nucleic acid of claim 23.
- 5 27. A host cell transformed with a vector of claim 25.
28. A method comprising culturing a host cell transfected to express heregulin 2- $\alpha$ , and recovering the heregulin 2- $\alpha$  from the host cell.
- 10 29. The method of claim 28 wherein the heregulin 2- $\alpha$  is recovered from the host cell culture medium.
30. The method of claim 28 wherein the host cell is transfected with an expression vector comprising heregulin 2- $\alpha$  nucleic acid.
- 15 31. A method comprising culturing a host cell transfected to express heregulin 2- $\beta$ , and recovering the heregulin 2- $\beta$  from the host cell.
- 20 32. The method of claim 31 wherein the heregulin 2- $\beta$  is recovered from the host cell culture medium.
33. The method of claim 28 wherein the host cell is transfected with an expression vector comprising heregulin 2- $\beta$  nucleic acid.
- 25 34. A method of determining the presence of a heregulin 2- $\alpha$  nucleic acid, comprising contacting the nucleic acid of claim 21 with a test sample nucleic acid and determining whether hybridization has occurred.
- 30 35. A method of determining the presence of a heregulin 2- $\beta$  nucleic acid, comprising contacting the nucleic acid of claim 23 with a test sample nucleic acid and determining whether hybridization has occurred.

36. A method of amplifying a nucleic acid test sample comprising priming a nucleic acid polymerase chain reaction with the nucleic acid of claim 21.

5 37. A method of amplifying a nucleic acid test sample comprising priming a nucleic acid polymerase chain reaction with the nucleic acid of claim 23.

38. A host cell transformed with a vector of claim 26.

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